Rural Lines

RURAL ELECTRIFICATION ADMINISTRATION • U. S. DEPARTMENT OF AGRICULTURE

MAY
1959

STORM STORY P. 3
ELECTRIC SECTION—P. 12

A Message from the ADMINISTRATOR

At this time, plans are under way for the observance of two REA birthdays. One is the 24th birthday on May 11 this year. The other is the 25th birthday coming up in 1960.

REA's Silver Anniversary will be celebrated not on just one day, but throughout most of next year. All over the country, the story of the first quarter century of the REA electric program is going to be told. It is a big story. Briefly it is this: 1,030 electric systems in operation; more than 4½ million consumers served; debt payments of more than a billion dollars with only one borrower delinquent; and the systems growing every day.

We have learned already of the plans of many systems to observe the 25th anniversary with special issues of their news organs, special days and special meetings.

This is gratifying to me, because the result will be a big gain in member and public education. Too many people do not know the history of rural electrification. Too many do not know that the program is helping to develop a better agriculture and a better way of life in rural areas. Too many do not know that co-ops are private enterprise in the best meaning of that term. Too many members do not know that they have an actual stake in their cooperative and that their interest and participation in co-op affairs is needed to secure the gains that have been made and to assure future success.

A number of questions are being asked about the program. This might be due to the program's phenomenal success, and it might be due to the way some of us are handling our business. A well informed membership can help to resolve these questions. I suggest therefore that all anniversary activities be directed toward building an informed, active membership which can help to arrive at decisions that will benefit everybody.

David A. Hamil

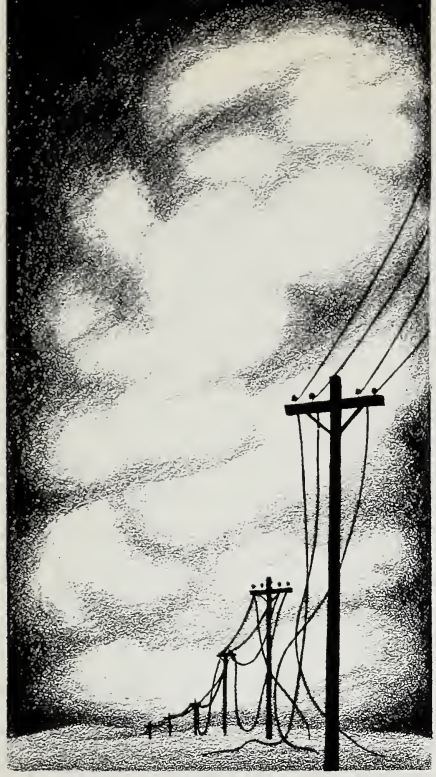
Administrator.

Rural Lines

Cover Picture: Everybody enjoys the telephone. This telephone is just one of the more than 797,000 on our borrowers' lines.

Editor: John H. Howard—Contributors to this issue: James D. O'Connor; Charles H. Tool; Thomas P. Branch; Louisan Mamer.

Issued monthly by the Rural Electrification Administration, U. S. Department of Agriculture, Washington 25, D. C. Subscribe to this publication from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price $1.50 a year; foreign $2 a year; single copies, 15 cents. Printing of this publication has been approved by the Director of the Bureau of the Budget, January 3, 1957 • Vol. 5, No. 12.



Editor's Note: This report by Mr. O'Connor is a graphic account of how Indiana co-ops worked together in a recent sleet storm. Emergency pools did an excellent job of restoring service in Indiana during the storm-ridden late winter months of 1958-59.

WORKING TOGETHER

AGAINST WEATHER

by James D. O'Connor, Manager
Pulaski-White Rural Telephone Cooperative, Inc.

Wednesday morning, January 21, was dark and foreboding. The weather forecast called for more snow to top the 6-inch crust already on the ground. We were also threatened with sleet and freezing rain. By 9 o'clock in the morning we were getting the sleet and freezing rain, but very little snow. By noon our open wire lines were loaded with ice; and the sag between poles appeared to be much more than normal sag.

Immediately after noon one of our trucks was sent to our Buffalo exchange to clear an assortment of drop-lines which falling limbs had broken, and open wire lines "welded" together by the freezing rain. I took our second truck and worked on similar items in the Star City area. The sleet and freezing rain continued until about 4:00 p.m. By this time it was beginning to get dark and the wind had risen. The lines in both exchanges showed clear on the power boards, but a few drop-lines were still down. The roads were so slick that driving at any speed was risky.

I checked with our office personnel at 4:20 p.m. and learned that the

crew working in Buffalo had completed clearing lines there and had started back to the Star City office. In the meantime, a report of trouble came from the western edge of the Star City area. I left to clear that trouble.

I arrived home slightly after 6:00 p.m. My wife informed me that one of our linemen had called and reported "C" line (Star City) in trouble. I drove to the location as quickly as possible. A dead-end pole on a 20-wire lead had snapped 3 feet below the second arm. When the pole snapped, poles broke on down the line for 20 spans. The first 2,500 feet of this mess was lying in the roadway, so the first order of business was clearing debris. This was completed at 9:30 p.m. I was able to phone all the members of the executive committee and discuss the method of repair. All were agreed that placing distribution wire seemed the quickest and most practicable method.

All toll lines out of Star City were O. D. so I drove to Winamac to call for equipment and assistance. The trip was in vain. Winamac could call only half of their local subscribers and the Winamac exchange was completely isolated from the rest of the world.

Early on the morning of Thursday, January 22, a trip was made to the Buffalo exchange to check an alarm condition. It was found there was an outage on the electric power line. Our battery voltage was still excellent and the calling rate not extraordinarily high. Power was restored later in the day. From the Buffalo exchange it was possible to make long distance calls. I placed a call to Mr. Byron Draper, manager of the Smithville Telephone Company, at Ellettsville, Ind., in hopes that he carried some eleven pair D. W. in stock. Mr. Draper had none of the wire, but suggested two supply houses which might have the needed materials. He stressed the necessity for immediate contact as the storm was general enough that warehouses were likely to be rushed with orders.

One of the supply companies in Genoa, Ill., reported that they had the desired amount of wire and would hold it for us. A truck was dispatched to pick up the needed supplies.

Local men were hired to clear the broken poles, cross-arms, and

Site of last pole that snapped

Salvaged poles

wire from the area so that there would be room to work with the distribution wire. The road was a solid strip of ice and this made progress much slower than normally expected.

We called on Yeoman Telephone Company for assistance in our reconstruction. They lent the assistance of their truck and their very able plant manager, Floyd Oberkrom. Mr. Oberkrom was a very valuable worker. He has had extensive experience with a contractor in REA line construction. Mr. Dale Patrick, of the Geetingsville Telephone Company also came down on two different occasions to lend a hand. The ground was frozen approximately 15 inches deep. This made digging a very difficult task. The Fulton County REMC of Rochester, Ind., had a large construction truck in the area and they assisted us in digging holes and pulling broken pole stubs from the ground.

It was Tuesday evening before all of our 55 subscribers could once again use their telephones. These people were out of service for a total of 144 hours. This time would have been much less had weather conditions been more favorable. Without

J. D. O'Connor (left) discusses a problem with Board Treasurer John Binkley.

the cooperation of our neighbors of the Emergency Labor Pool and the assistance of the Fulton County REMC, the job would have taken a longer period of time.

We were billed actual expenses incurred by the companies who assisted us for the use of their equipment and personnel. This was much less than the cost of a contractor would have been and, to my knowledge, there was not a contractor within 150 miles who would have been able and willing to help us.

The Indiana Emergency Labor Pool is a mutual disaster aid organization of REA telephone borrowers.

The State is divided into four areas. Each area has a manager (it is a rotating job) who keeps track at all times of the equipment, manpower, and material each borrower has at hand.

In case of disaster to any borrower, the manager calls the area manager, who in turn calls other borrowers to dispatch whatever is needed.

In case of widespread trouble, one area manager calls an adjoining area for help. It is all done on an actual cost basis.

Replacement of dead-end pole that gave way.

STRICTLY RURAL AND STRICTLY COOPERATIVE

Some years back the farmers and goat ranchers in the hill country of Comal County, Texas, decided that they needed modern telephone service. So they approached a telephone company operating in those parts. The company took a good look at the rough, rocky terrain, with ranches scattered thinly through the hills. They noticed that the area didn't have a single town, village or hamlet. Telephone service in the hill country, they decided, wasn't feasible as a paying proposition.

The farmers and goat ranchers,

Resetting poles along this new road will cost $2,200.

however, were a stubborn lot. Most of them are descendants of a group of German colonists established in the Guadalupe Valley in 1845 by one Prince Solms-Braunfels, in protest about how things were going in the old country. The descendants, after failing to get telephone service, banded together into a cooperative, and asked REA for a loan.

A feasible proposition was worked out for a loan to build a system in sparsely settled areas of Comal, Kendall, Blanco and Bexar counties. It wasn't much of a potential, but the REA loan people believed it would work out, because these people had the qualities of thrift, efficiency, and ability to organize that would make it work. They were right.

In spite of the rocks and brush, the members of the Guadalupe Valley Telephone Cooperative pitched in like an old-time threshing ring, and built much of the line themselves. It took a lot of blasting powder, but a good deal of labor cost was saved by the farmer cooperators, who toted cable over the hills the hard way when jeeps and trucks could go no farther.

The Guadalupe Valley co-op's organization and building coincided with 7 years of drought which did a lot of damage to the flocks of sheep and Angora goats, and cattle herds, in that part of Texas. In spite of that, the co-op is now operating in the black, with $20,000 in advance payments to REA and $30,000 in reserve.

Part of it is due to the fact that the brush-eating Angora goat can

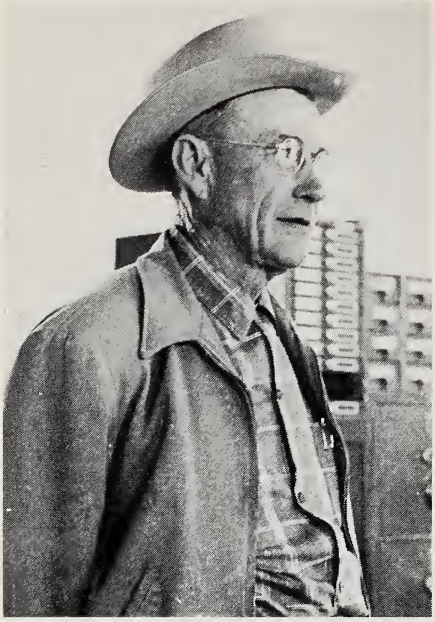
The new lake will flood the ranch home of Mr. and Mrs. Walter Jonas.

stand a lot of drought, and that, largely as a result of the drought, the price of mohair has risen to new heights in the past 2 years. Most of it is due to the fact that the co-op kept down their costs while building their revenues.

Smithsons Valley, headquarters of the co-op, is literally a wide place in the road. It consists of one ranch house, an unused store, the small warehouse of the co-op, and the two-room building that serves as the co-op's office. It is about as big a metropolis as there is on the co-op's lines.

Setting the first pole called for a celebration.

The modest headquarters building cost $3,000, thanks to do-it-yourself building, and the warehouse-garage cost $1,700. Headquarters is inhabited by Mrs. Dorothy Paulus, who runs the show with great efficiency, with the part-time help of Mrs. Herbert Jonas, wife of one of the line-



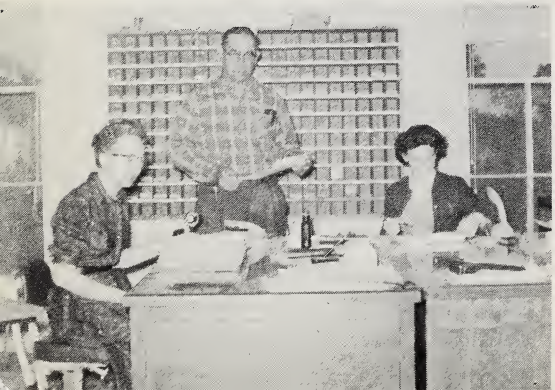
President Alex Elbel looks for big expansion.

men. The other two linemen are also local boys, Albert Kunz, Jr., and Alfred Reidel.

Ben Wolle, who owns a goat ranch near Smithsons Valley, is manager, having done a long apprenticeship as a board member and as president of the board. The total payroll is around $1,500 per month.

Meanwhile, revenues have gone up. Revenue per subscriber climbed from $8.35 in 1956 to $9.65 in 1958. There were 534 subscribers in 1956; now there are around 600. Net toll revenue has risen from $13,300 in 1956 to $20,300 in 1958. Exchange revenue was $38,000 in 1956; by 1958 it was almost $44,000. Miscellaneous revenues almost doubled in that period.

Left to right: Mrs. Dorothy Paulus; Manager Ben Wolle; and Mrs. Herbert Jonas.



Manager Wolle says no tricks are used to promote sales of extension telephones or service.

"If you know us Germans, you know we are too stubborn for high pressure tactics. You have to use psychology. I just tell the ranchers what we got. They're smart. They know a good thing when they see it. A long distance call to town can save them a lot of money."

As a result of their good record, the Guadalupe Valley co-op has been approved a C loan of $697,000 to serve 929 rural subscribers in Gonzales, Caldwell, Dewitt and Guadalupe Counties. This is a rich farming area, with a much higher density than the 1.6 per mile on the co-op's existing lines. The new loan has an estimated potential of 1,067 subscribers.

President Alex Elbel says that the current system is due for much expansion. The U.S. Corps of Engineers and the Guadalupe-Blanco River Authority are now building a dam in the Guadalupe Valley, for flood control and water conservation. The 6,910 foot-long, 224-foot-high dam will create an 8,240 to 12,890 acre lake which will boom the tourist business. Already cottages and resorts are beginning to be built; real estate prices on the expected lake shore are rising. Engineers and construction men are using $300 per month in tolls, and the project has just begun.

"Tolls on our six exchanges will double," says Wolle. "This beautiful Guadulupe Valley will be one of Texas' favorite resort areas."

Controlling Materials and Supplies

by Charles H. Tool, Head Management Section
Telephone Operations and Loans Division

Effective material control has always been an important job for management. Now that more and more REA-financed telephone systems are graduating to the A or B revenue classes, and with changes in the Class A and B Systems in Station Accounting, material control is even more important.

Adoption of Exempt Material Accounting and Average Unit Costs for Station Connections will relieve plant forces of detailed nut and bolt reporting of all items associated with Station Connections, and with most of the minor items of material used for routine construction and maintenance.

The key to the efficiency of adopting a Unit Cost Plant Accounting procedure for Station Connections and the Associated Exempt Material Accounting is an effective purchase and disposition routine. By adopting proper control procedures, here's what management can achieve.

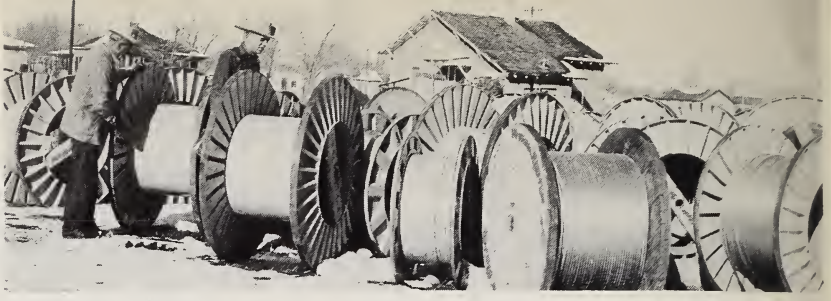
1. Keep the investment in Station Apparatus and Station Connections at a reasonable level.
2. Avoid tying up cash in materials not actually in service. This will prevent an overstatement of capital investment and overstatement of expenses.
3. Level out the charges to maintenance accounts. This will prevent distortion of operating costs during any given month or quarter.
4. Avoid large adjustments at the close of the accounting period, which will distort maintenance costs during the last month or quarter of the accounting period.
5. Avoid unnecessary adjustments in cost records or possible disallowances of a part of such costs or expenses when seeking adjustments in rates.
6. Reduce the costs of handling and providing warehouse space and storage facilities.
7. Provide reasonable assurance that a short supply of any given item of material will not develop.

Control Procedure

The responsibility of administering the procedure should be a job for the manager or plant superintendent. These duties of purchasing and storing are something like those of a cashier who is collecting monthly bills and making daily deposits. Control of disbursements should be as effective as the controls established for persons responsible for disbursing cash. The material and supplies, in fact, represent cash and are a current asset of the corporation.

The inventory control routines to be followed should embrace the following records and checks:

1. Perpetual inventory records of



A quarterly inventory check date should be established.

all units of non-exempt material must be established.

2. Memorandum Purchase Records and bin cards should be maintained on station apparatus and exempt material items which are used daily for maintenance or construction.
3. Minimum quantity levels should be established for each item and noted on the records. Quantities normally used in a period of 90 days should also be established and noted on the records. The quantity levels and amounts used during the period should be adjusted periodically based on experience.
4. A quarterly inventory check date should be established.
5. At the established inventory check date, the person responsible should review each (non-exempt) unit on the perpetual inventory records. The quantity on hand should be compared with the estimated number of such units necessary for completing all scheduled Work Orders and routine construction for the ensuing period.
6. The approximate number of Exempt Material Items on hand should be checked against the minimum quantity levels. In checking quantities of Exempt Material on hand, an actual count is not necessary. The person responsible soon becomes familiar with the items which are constantly being used and the check can be accomplished in a short period of time.
7. A check of material items carried on trucks should be made at the same time as the perpetual inventory card and the bin checks are made.

Plant personnel should be trained to stock their vehicles with only those items currently being used. For example, when a combination man's major assignment is trouble shooting, he need not carry the type or amount of material necessary for station installation that he would if his duties were principally service order work. The same is true of stock carried on construction trucks. The construction foreman should return unused material to the storeroom when finished with a pole line job and restock for the next job, which may be underground cable or aerial wire construction.

Purchasing

A purchase order form should be used and a procedure developed that will provide for approval of all purchases of materials and equipment by an executive officer of the corporation. For most Class B systems, an original and three copies of the form should be sufficient.

After proper approval, one copy should be routed to the Accounting Department, one to the Receiving Office, and one (the records copy) retained by the Plant Superintendent or Manager.

Upon receipt of materials, a receiving ticket should be prepared and

routed through the Plant Superintendent or Manager to the Accounting Department, for verification by the Accounting Department prior to payment of invoices. The Plant Superintendent should follow-up on all back orders and items received in unsatisfactory condition. He should become familiar with his sources of of supply, locations of their warehouses, and the approximate time he can expect delivery of the various categories of materials and supplies. In emergency situations, this information is extremely useful when it becomes necessary to expedite delivery or pick up material when freight shipments may also be slow. He should also become familiar with his suppliers' discounts, terms, policies relative to bulk orders where an order for a considerable quantity of those units or items which are continually being used may be placed for delivery and billing at periodic future dates.

Disposing of Material

When converting and rehabilitating telephone plant, many units of material and equipment are recovered which are reusable for saleable, and other materials are recovered which are worthless and have no value. The material falls into four classes:

1. Good material reusable in the new system.
2. Good material reusable and saleable for use in magneto, or common battery system.
3. Worthless material, not reusable, but having a junk value.
4. Worthless material, not reusable, having no value.

All such units, except worthless material, not reusable and having no value, should be brought into the perpetual inventory records; material reusable in the new system at current cost new; material reusable and saleable at estimated sales value; and worthless material having a junk value at estimated junk value.

Assuming that portion of the material in the first category which was salvaged upon rehabilitation is reusable in the new system but will not be needed for some time to come, and that all material in the second and third categories will be sold, a disposition procedure should be established. A disposition order form comprised of an original and two copies should be adopted. The order is routed to the executive officer for approval of the sale. The original is then routed to the Accounting Department for billing purposes, one copy to the shipping clerk, and one copy returned to the Plant Superintendent or Manager.

Disposition orders should be prepared on worthless materials not reusable, and having no value, as they come to the attention of the person making the periodic inventory check; upon approval appropriate disposition should be made. Disposition orders on saleable materials should be prepared at the time a firm order is received for the purchase of such material.

Section 1855 of the Telephone Operations Manual provides a guide for establishing accounting records for Materials and Supplies.

Memorandum purchase records should be kept on items used every day.

BOOSTER PANE

by Thomas P. Branch, Wiring Specialist, REA

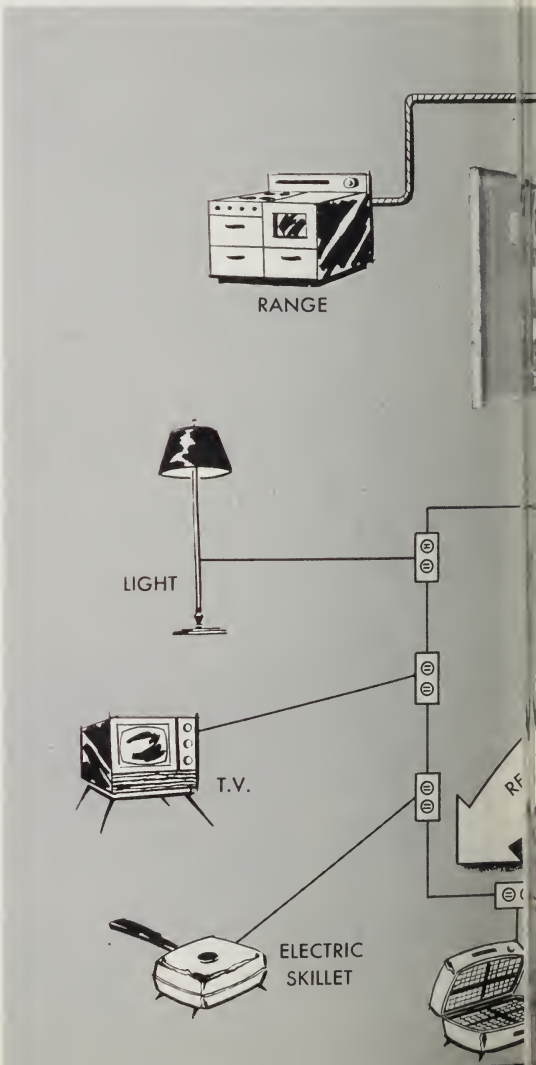
A big hue and cry is heard nowadays about the inadequate capacity of electric service and feeders. Many people have a desire to buy and use modern electrical equipment and conveniences. They are puzzled when the dealer informs them that they can't safely use this equipment on their existing electrical system.

There is no excuse, of course, for such a condition in the case of new construction. Owners, builders, and contractors simply must plan for and install larger services, more feeders and circuits as well as plenty of outlets for the attachment of modern electrical equipment. In addition, spare feeder and final branch circuit centers are a must if future additional equipment is to be installed and operated satisfactorily. The blame for these conditions may not rightfully be placed on electrical inspectors. Their responsibility is to see that what is installed complies with regulations for proper methods and safety. No utilization of electrical equipment should be undertaken without a thorough examination by a qualified inspector of the wiring system on which the equipment is to be used.

As to our wiring installations made 20, 10, or even 5 years ago, let us admit that we did not know what to expect. In this way we may take a lesson chapter from railroad operators. They installed larger rails and provided heavier ballasting. Even then with the increasing loads of cars and more cars one may well recall that often a booster engine was necessary to assist the leading engine in pushing the train up and over long steep grades.

To upgrade existing wiring systems, it is not necessary to completely remove existing load center or circuits when they are safely capable of serving the equipment for which they were installed.

Just as the power supplier must install heavier supply lines, transformers and substations in order to meet increasing consumer demands for additional power, so must the consumer heavy up his own service and distribution equipment to supply

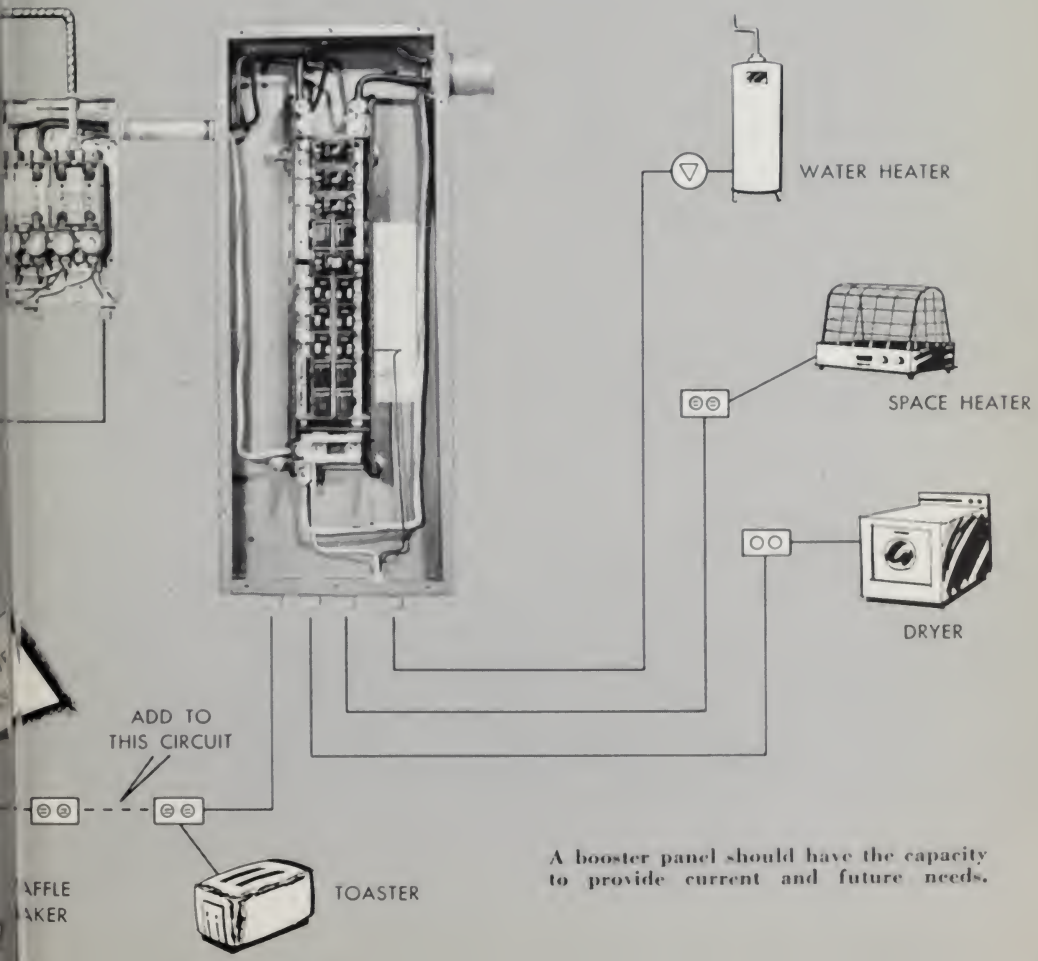


CAN BOOST KHW SALES

his own needs safely. This may be done by providing larger service wires leading into his premises with a booster service panel backing up his existing panel. This booster panel should contain the additional feeder and branch circuit capacity to provide all his present and future needs for electric power usage.

Power suppliers and contractors have the know-how and should help the farm and home owner convert his existing service into an Expandable Wiring System (See REA Bulletin No. 143-1.)

The well-informed rural power user will realize that each new use of electric power which he is able to use and apply on the farm and in the home is a major asset. Assets such as these, accumulated by rural families, add up to better communities.



A booster panel should have the capacity to provide current and future needs.

ARE YOUR RECORDS SAFE?

Remains of Navopache's fire-gutted headquarters.

"My advice to any REA borrower would be to be sure that his vault is adequate, and that he uses it," says Dewey Farr, manager of the Navopache Electric Cooperative at Lakeside, Ariz.

"Moreover," continued Farr, "If there is a fire, and there is a choice between saving the maps and records and saving the building, save the maps and records. Starting from scratch, maps cost more to replace."

Dewey Farr speaks with authority. His headquarters building burned down, and, being a careful man with conscientious staff assistants, he saved most of his records because they were in the habit of putting records in the vault.

It was midnight on December 30 when the fire broke out, in zero weather. To understand the difficulties encountered by the citizens of Lakeside in this unusual "holiday celebration," it is necessary to visualize the setting.

Lakeside is a small resort village among the tall Ponderosa pines of the 7,000-foot-high Sitgreaves National Forest. It is unincorporated, and had no volunteer fire department. Nine miles west is another resort village, Show Low. To the east is Pinetop, and on farther the lumber mill town of McNary. The latter two towns sent their fire trucks, but it was a useless attempt. The tanks froze. Hoses were run into the small lake alongside the headquarters, when pumps arrived. But it was too late to save the frame and stucco structure.

However, since most of the co-op's records were in the vault, they were back in business in 24 hours, in temporary headquarters in a log structure which also houses a store. The vault was not large enough to house some key maps and linens. Fortunately, some of these connected with permits from the Forest Service and the nearby Fort Apache Indian reservation, were stored with those agencies. In the debris were found the co-op's work orders, charred on the outside, but quite legible. This made it possible for the Navopache co-op to carry on with thousands of dollars worth of work, and thus receive reimbursement from REA.

In the vaults were the co-op's articles of incorporation, deeds and titles to property, insurance policies,

cash and checks, minute books, accounts receivable, billing records, meter books, social insurance records, and general ledgers.

'It is so easy not to put away maps in the vault at night," commented Farr. "Our problem was simply that the vault wasn't big enough. Sometimes people store nonessential stuff in the vault, and leave invaluable documents outside at night. This is particularly true of maps. As I said before, it is literally true that it costs less to build a new building than to reproduce such documents."

The new headquarters has been designed by a leading Arizona architect, and will be built this year. The vault is planned to be exceptionally large and exceedingly fire-proof.

Dewey Farr is the descendant of early pioneers who played a great part in western development. He himself is a former member of the State Highway Commission and is widely known as a community leader. He has been a leader in asking the Navajo County Commission for a volunteer fire district permit, to further protect the neighborhood.

Farr is proud of the tightly efficient and economical Navopache operation and of his staff of 24 people. The system has about 4,200 members and 900 miles of line, running eventually into New Mexico.

The resort business has become the number one business, running ahead of the extensive sawmilling and logging operations. Cattle grazing on Indian and National Forest lands account for many of the co-op's consumers.

S. D. Gordom, outside superintendent, and Manager Dewey Farr.

Lakeside is built on Rainbow Lake, superb for fishing, which is one of a chain of three built by pioneer ranchers for a source of irrigation water.

Smith Park, a Lakeside summer cottage and retirement home development, adjoins Lakeside. About 180 homes have been built, along with a country club, with a 9-hole golf course with a little lake for a hazard on the 9th hole. The lake is pumped with electricity and the greens are sprinkled.

"The whole project is electric," said Farr. "There is only one house in the whole lot which installed gas heating. Practically all of them are electric."

Rainbow Lake's superb fishing is famous in Arizona.

The Apache tribe is going into the gas station and resort business.

Lakeside's school is fully electric and one large church is partly electrified.

Three officials of the Arizona Public Service Company have cottages at Smith Park. Two of these are vice-presidents.

The lumber mills at McNary are fully electric, although they have their own generating plant.

One of Farr's best consumers, and one of whom he expects further development, is the Apache Indian tribe on the nearby Fort Apache reservation.

They have invested tribal funds in a resort, which is proving to be tremendously popular with both Arizonans and tourists from out-of-state. They began with a gas station and 12 fully electrified cabins. This will be expanded with many more cabins, a golf course, and a fishing lake.

Cibecue, another Apache settlement of 185 families, is due to become all-electric in the near future. Cibecue is building a tribal sawmill, and also contemplates a resort development.

Navopache substations serve White River, Indian agency headquarters; Pinetop's Lakeside, a 69 line runs to St. John's, and to Glenwood, N. Mex., 130 miles from its source.

The Navopache co-op has an excellent safety record, dropping its insurance costs from $14 to less than $5 in just 3 years.

"It's due to men like S. D. Gordom, the outside superintendent," says Farr. "He can build cheaply, economically, and safely through all this rock and woods. He has good men to work with, like Dow Rhotan who I think is the best digger operator in the State.

"As for selling kwh, our records are mostly due to an exceptionally good electrification advisor, J. I. Gardner.

"Gardner knows electricity, so he can sell commercial accounts. He also is an exceptionally good cook, and can put on a cooking demonstration with the best."

Tony Van Wagnan's summer house is typical of the new resort development.

He Usually Wore Rubber Gloves

The day was bright and cold. The job the crew had to do was fairly routine. It was to de-energize an A-6, transformer installation, to retire secondary service and replace it with a span of primary, and to move the transformer in one span. The 3 KVA line was fused with a 1-ampere hi-surge fuse. The pole, a southern yellow pine stick, in good condition except for numerous gaff marks, was slightly raked.

Eleven men were present, with the construction foreman in charge, an old hand with 10 years experience on the line. All men on the crew were old friends, had been close to each other since childhood. That was one reason that safety practices were not always strictly enforced.

It was policy to wear rubber gloves when within reaching distance of conductors or any apparatus which was energized at more than 750 volts. It *wasn't* necessary to wear them from the ground up. Employees were not required to wear rubber gloves when working with hot sticks. Many did, such as Bill Baker.

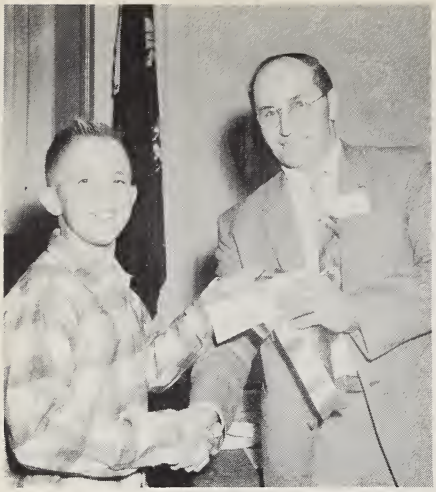
Bill was more conscientious than most about wearing rubber gloves. He was in his middle thirties, married, with a couple of kids. The steady kind. When you don't have hard-and-fast safety discipline—and this co-op never enforced discipline, since everybody was everybody else's old friend —you wouldn't think of questioning Bill Baker's motives in climbing a pole beyond safe limits without rubber gloves on.

Bill climbed the pole with a hand line. He intended to use a hot line cutter to cut the line, cut-out, and the lightning arrester jumpers, which were attached with split-bolt connectors. Just below the transformer, Bill swung to the low side of the pole, then climbed several steps higher, which put him head and shoulders above the transformer. He had not yet belted off, possibly because he wanted to hang his hand line in a position to lower the transformer more easily. His right hand was on the upper transformer hangar bolt, solidly grounded.

At that moment Bill slipped and a gaff cut out. He instinctively reached out with his left hand, and grabbed the high voltage bushing.

Men below heard the arc, saw his rigid body in the moment before the transformer fuse blew. As the cut-out door opened, his right hand released, his body made a half turn and made a spread-eagle face-downward fall to the ground. Artificial resuscitation failed.

Investigator's Recommendations: That the system adopt and strictly adhere to the 100 percent Rubber Glove Rule.



President Judd Walker presents award to Lonny Trout.

Montana Co-ops Pioneer Youth Electric Fair

With Montana co-ops, the accent in power use work is on youth. And with youth, the emphasis is on practical activities to improve farm and home living. The result is a sound, growing program that extends into the future. It helps young people to develop and exhibit their electrical skills and makes them conscious of the values of their co-op electrification program. Demonstrations and exhibits provide carry-over of information to adults.

The Youth Electric Fair is the vehicle used to reach the goals set up by Montana rural electric co-op leaders. State competitions were held in October during the annual meeting of the statewide association. Local run-offs start in March and continue through the summer.

Any youngster, under 21 years of age and a member of an adult-sponsored organization, may participate. This opens the fair to all youths: 4-H Club members, Future Farmers of America, students in schools, Boy Scouts, Girl Scouts, co-op sponsored members' children, and others who can find an adult group to sponsor them.

The youngsters may enter one or more sections. Entries may be individual, team, or club. The requirements for each section are outlined below:

Electric Constructed Entry — Entrant will build some type of electric article, such as a brooder, timer, or candler. The item must conform with electric safety practices outlined by the Underwriters' Code, and material must be approved by the Underwriters' Laboratories. The entry will be judged for practicability, safety, and workmanship.

Electric Lamp Entry—Any type of a lamp constructed for the purpose of lighting may be entered in this section. All lamps must be built to conform with specifications listed on page 18 of U. S. Department of Agriculture Farmers' Bulletin No. 1838. Lamps must be complete with shades, bulbs, bases, and cords. All plugs must be of the type in which the Underwriters' knot can be tied. Entries will be judged on meeting the specifications of good lighting, design, and originality.

Electric Demonstrations Entry A demonstration will be prepared to show electricity's use or application in some manner. If a demonstration is presented on freezing, cooking or sewing, the demonstrator must point out some electrical safety or operational phase in addition to showing methods or practices being dem-

onstrated. All demonstrations will be introduced and have 15 minutes for their presentation.

Electric Welding Entry—Entrant will build an item or article using electric welding. It must show at least two types of welds in its construction. Entrant will be judged 50 percent on ability as a welder and 50 percent for his welded entry.

Participating cooperatives conduct eliminations on the local level through local youth electric fairs, often held in connection with a co-op's annual meeting. Local winners in each of the four categories — demonstration, lamps, constructed articles, and welded projects—receive cash awards and first-place local winners in each section receive an all-expenses-paid trip to the State Youth Electric Fair.

In the 1958 statewide Youth Electric Fair, 29 local winners from 8 cooperatives participated in the 4 final contests. Each entrant received a blue "state finalist" ribbon. First-place winner in each class won a purple first-class ribbon and a $25.00 cash award.

Young people who have participated in the Youth Electric Fair are eligible to compete in the scholarship program sponsored by the Montana Rural Electric Cooperative Association. The statewide awards three $100 scholarships each year.

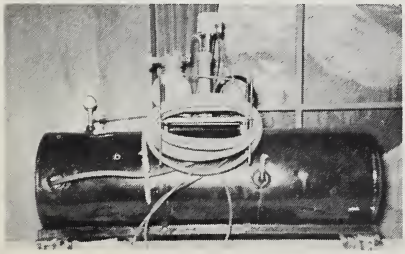
At the 1958 annual meeting of the Montana statewide co-op association, the State Board established several policies relating to youth work: "The State Power Use Committee will consist of all power use advisers in the State. This group in turn will annually select an executive committee to execute and carry out any and all State Board approved programs and power use activities. The State Association will contribute $300 to Montana State College to be used in training 4-H electric leaders.

The State Power Use Committee selected the following executive committee: Chairman, Clarence V. Rupp, Yellowstone Valley Electric Cooperative of Huntley; Vice-Chairman, Alton Hull of Fergus Electric of Lewistown; and Secretary Budd Weir of Park Electric of Livingston. The committee also voted to have the executive committee to serve as 1959 Youth Electric Fair Committee.

"Practicality is our aim in youth work," Chairman Rupp said. "We stress good, everyday practical applications that can be used to advantage on farms. We're not trying to make wiremen or electrical engineers." In their youth work, electric co-ops in Montana work with existing organizations and implement their programs and assist with their activities. The results show that the Youth Program is soundly conceived.

Tom Bikel does his demonstration at the Fair. ➤

This air compressor was built by Ed Olson of Missoula.



Some of McDade's sows are Tamworths.

Pig Parlors on the Plains

Northeastern New Mexico is a long way from the Corn Belt. It isn't a place where you'd expect to find the modern innovation of pig parlors. That corner of New Mexico is a mile high, on a treeless plain, and plagued with an aridity the Corn Belt never knew. It is a region of large cattle ranches, producing mostly feeder stock, along with some steers fattened on milo maize and small grain. Such crop farming as exists is mostly dry-farming. There is some irrigation, from deep wells.

The pig farming now being practiced by two board trustees of the Southwestern Electric Cooperative, Inc., of Clayton, N. Mex., is introducing a new type of livestock enterprise to the high prairies, and it may well prove to be a boon to that co-op's troubles in load building.

The Clayton co-op has been plagued by many things. One of them has been a low density: 1240 miles of line and only about 800 members. The average investment is about $1,-800 per member, in contrast to the national average in 1947 of only $594.

Another is the seven-year drought in that area, which has hurt its members, and made power use campaigns suffer.

No other power load than farming is in the offing. Therefore, the trend toward pig parlors is especially heartening to Roy M. Brown, manager of the Southwestern Electric Co-op, and to all members of the board of trustees.

Joe McDade of Clayton, secretary of the board, is one of the new pig parlor operators. McDade is basically a cattle rancher. He now has about 400 head of Herefords, cows and calves, on his ranch. His pig farming venture is separate from his cattle operation.

McDade now has 25 mature sows and 46 gilts ready to breed soon. The sows are of several breeds: Hampshire, Tamworth, and Duroc. However, the basis of his herd are from Landrace sows. He saves all gilts born to his Landrace breeding stock,

Top: Left to right: Jack Copeland and Manager Roy Brown.

since he finds that sows of this meat-type Danish breed tend to be better mothers, producing more and healthier pigs, and also saving more from each litter.

Therefore, his eventual aim is to have from 75 to 80 sows, and to farrow 100 pigs per month. His Landrace sows have produced an average of ten pigs per litter, of which they have saved an average nine.

Thanks to the heat lamps in his farrowing pens, the loss has not been greater. The sow is confined by iron bars to a small space. The pigs may go to a nearby place, each well warmed by a 250-watt infrared lamp. In that way, the chance of the sow killing a pig by lying on it is minimized, and the pigs do not require the presence of the sow to keep warm.

The pigs are kept in the farrowing pen under lamps for 2 or 3 weeks before being moved, with their mothers, to sheds where their feeding begins. While in the farrowing pens, pigs need iron shots at 2 days old.

Feed for fattening is a commercial mixture, plus home-grown barley and milo maize. McDade figures it costs about 10½¢ per pound to raise pigs, fatten, and market them. Even at today's low prices, that makes money.

"They ship in hogs by the hundred to the packing house in Amarillo from Omaha," says McDade. "The market for pork is getting better here. No reason why we can't compete at an advantage—after all, we are shipping our sorghum and milo to the Middle West for hog fattening rations."

Bottom: Roy Brown discusses pigs with Joe McDade.

Pigs need mother sow only when suckling.

Jack Copeland of Amistad, N. Mex., is also a member of the board of trustees of the co-op. Jack has 100 registered Herefords on his ranch, and is basically a breeding stock raiser. His pig parlor operation is similar to McDade's. He has 150 pigs on feed in his pig parlor. His 21 sows are of Hampshire stock, which he is crossing with a Landrace boar, just opposite to McDade's breeding scheme. Copeland feeds them a commercial feed, plus his own grain, chiefly sorghum. He hopes to boost his pig crop to 1000.

Both Copeland and McDade use electrically heated waterers for their swine.

"It could be," says Manager Brown, "that this will be the beginning of quite an extensive swine-growing industry in this area. It won't supplant the cattle business, of course, nor will it throw the Corn Belt out of business. But it could help balance our livestock program."

POWER use exchange

SERVICE DIRECTORIES — The Fruit Belt Electric Cooperative, Cassopolis, Mich., kills two birds with one stone. It helps members and itself through a two-column "Member Service Directory" published each month in its *Newsletter.* The column's subtitle explains, "This service is offered free to our members who are in business. Please print your copy as you want it to appear in the newsletter and mail, along with your account number . . . " Out of about 25 business listings appearing in 1959 newsletters, the first 10 or 11 listed are electrical or plumbing contractors or service agents scattered over co-op territory, who are available to perform services for their co-op member neighbors.

Presque Isle Electric Cooperative, Onaway, Mich., listed 16 service organizations in 9 towns in its December 1958 newsletter under the heading, "For Electric and Appliance Service in Our Rural Area Call These People." Others not listed but available for electrical and appliance contract work were urged to send their name, address, and phone number, and to state which service they offer so that their names might be added to the list published each month.

Jasper County REMC, Rensselaer, Inc., suggests in its March 1959 *Electric Service News* article, titled "Small Appliance Service," that members who have trouble obtaining service on small appliances might send them to the manufacturer or to an authorized service station located in the area. To assist members, the article lists names of about 20 makes of small appliances with addresses for local or national service centers.

HEATING BULLETINS—Two recent electric heating bulletins published by co-ops are *Electric Home Heating,* (20 pp.), from White County REMC, Monticello, Ind.; and *Electric Heat,* (12 pp.) from Hancock-Wood Electric Cooperative, North Baltimore, Ohio. White County REMC's publication contains a 4-page spread with pictures of 12 electrically heated homes; Hancock-Wood features a heat pump and ceiling cable heat installed in two members' homes.

OPEN HOUSE—More than 400 people saw up-to-date dairy equipment at an open house held in February, 1959, on a farm located near Sioux Falls, S. Dak., on lines of Sioux Valley Empire Electric Association at Colman. Features visitors saw included a pipeline milker and cleaner, 500-gallon bulk milk tank, 30-gallon quick-recovery water heater, 4800-watt electric blower type heater, thermostatically controlled ventilating fans, herringbone milking stalls for 12 cows, loafing shed, 100-ampere service entrance, and floodlighting.

WELDING CLASS—The 1959 Wabash graduating class in welding, fifth annual class to be sponsored by Wabash County REMC, Wabash, Ind., included 24 REMC members. Class members received welding certificates at the welding banquet at the close of the eight evening classes held during January. Each class period consisted of a 30-minute lecture and a 2-hour practice session on six electric welders installed for the purpose.

APPRECIATION—"Be it hereby resolved: The members of Pender Poultry Cooperative on behalf of their organization and other Pender County poultrymen, served by the Four-County system, wish to commend the linemen of Four-County Electric Membership Corp., Burgaw, N. C., for their successful efforts in maintaining dependable service during the recent emergencies." Gross income of $2 million for all types of poultry production in Pender County was estimated at year-end of 1958.

ELECTRIFIED AT 81—More than 500 persons attended an "open house" of a home built in 1923 and electrified last fall by an 81-year-old farmer and his wife, Mr. and Mrs. Arthur Groesbeck, Afton, Iowa. Wiring, plumbing, modern lighting, electric baseboard heating, insulation, water system, water heater, refrigerator, and range were installed and the house was painted last fall to ready it for the tour. The Groesbecks are served by Farmers' Electric Cooperative, Greenfield, Iowa.

STOCK WATERERS AND TANK HEATERS—For its January-February promotion, McDonough Power Cooperative, Macomb, Ill., offered members these incentives to buy an automatic stock waterer or stock tank heater: three infra-red brooding bulbs (250 watt) and free electric service (50 kwh per month) for 3 months. The kwh credit "must not reduce monthly energy bill below $5.00."

HEATING IN NORTHEAST—Delaware Electric Cooperative, Greenwood, Del., now has "27 fully electrically heated homes" on its system, according to *Current Letter,* January 1959. This co-op has approximately 9,700 consumers receiving service.

BARN VENTILATION—Two barn ventilation clinics held in February at Warren and Halleck, Minn., were arranged under local inter-industry sponsorship, including PKM Electric Cooperative of Warren, Minn., and county extension service. After a "bean-and-ham feed," Gene Miller, agricultural engineer from the Northwest School of Agriculture, Crookston, led a discussion on barn ventilation requirements and problems. After the formal program, farmers toured a farm ventilation installation. County agents, PKM Electric Cooperative, and local lumber dealers give free planning service to farmers interested in installing farm building ventilation systems.

SCHOOL EQUIPMENT — First truckload of equipment for homemaking departments of Kentucky schools was delivered in Nolin Rural Electric Cooperative area around Elizabethtown.

OFF THE PRESS—Two new publications of REA are now available for borrowers.

One of these deals with the subject of management. It is Personnel Practices for Business Security (Bulletin 109-6).

This bulletin outlines approved methods for the selection, training, and utilization of employees.

The other new publication, Expandable Wiring (Bulletin 143-1), shows how to make the wiring a consumer already has expandable in order to take care of future loads, without tearing out any old wiring.

Another REA publication, A Practical Approach to Making Policy (Bulletin 103-1), has been recently revised and reprinted. It covers ways and means of putting clear and consistent policies into writing.

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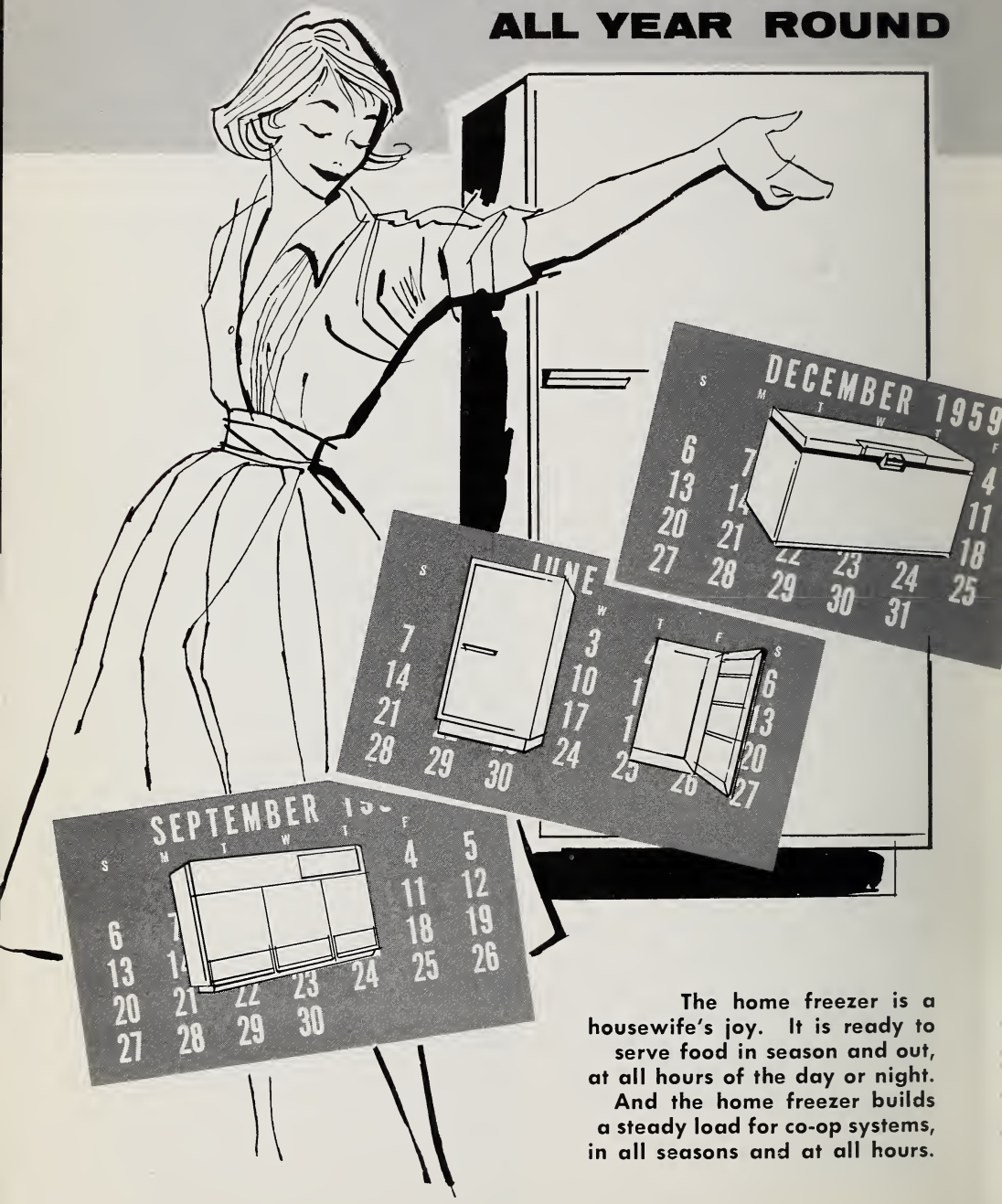
IT'S FREEZER TIME ALL YEAR ROUND



The home freezer is a housewife's joy. It is ready to serve food in season and out, at all hours of the day or night. And the home freezer builds a steady load for co-op systems, in all seasons and at all hours.